A SPOT on the chromatin landscape? Histone peptide arrays as a tool for epigenetic research.

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Public Summary:

Scientific Abstract:
Post-translational modifications of histones serve as docking sites and signals for effector proteins and chromatin-remodeling enzymes, thereby influencing many fundamental cellular processes. Nevertheless, there are huge gaps in the knowledge of which proteins read and write the 'histone code'. Several techniques have been used to decipher complex histone-modification patterns. However, none is entirely satisfactory owing to the inherent limitations of in vitro studies of histones, such as deficits in the knowledge of the proteins involved, and the associated difficulties in the consistent and quantitative generation of histone marks. An alternative technique that could prove to be a useful tool in the study of the histone code is the use of synthetic peptide arrays (SPOT blot analysis) as a screening approach to characterize macromolecules that interact with specific covalent modifications of histone tails.